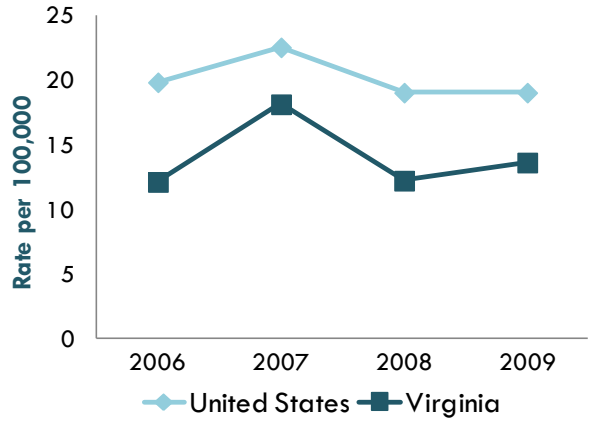
HIV Incidence Estimation

Updated November 2011

Incidence is the number of new cases of a disease that occur in a population over a certain period of time. HIV incidence surveillance estimates the number of new HIV infections that occur each year, including those not yet diagnosed. With assistance from the Centers for Disease Control and Prevention (CDC), Virginia estimates that between 2006-2009 the number of annual new HIV infections remained relatively stable with approximately 900 new infections each year (VDH, 2011). Nationally, the CDC estimates that approximately 50,000 new HIV infections occurred each year from 2006-2009 (Prejean, 2011).

Estimated Rate of New HIV Infections in the U.S. and Virginia, 2006-2009



METHOD FOR ESTIMATING HIV INCIDENCE

In order to estimate HIV incidence nationally and in Virginia, the Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS) method was used. The STARHS method uses a laboratory test (the BED HIV-1 Capture Enzyme) to classify newly diagnosed infections as either long-standing or recent (occurring within approximately the past 5 months). The STARHS result of the first available positive blood sample within 90 days of diagnosis, along with demographic data, HIV testing history and antiretroviral use are used to estimate HIV incidence.

VIRGINIA KEY FINDINGS 2006-2009

The Virginia Department of Health estimates that approximately 890 Virginians were newly infected with HIV in 2009. Based on this estimate, 14 of every 100,000 people living in Virginia were newly infected with HIV in 2009. Because of the small number of cases in Virginia, stable subgroup estimates by transmission category could not be produced.

Transmission Risk

Men who have sex with men (MSM) consistently represent the majority of new HIV infections among all transmission categories, and account for 63% of new 2009 HIV infections in Virginia.

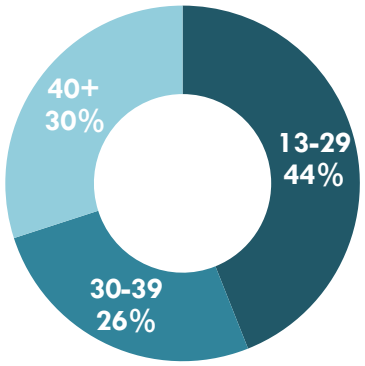
Race/Ethnicity

Of the estimated 890 new HIV infections in Virginia during 2009, 59% were among Black persons. Blacks were 5 times more likely to be newly infected with HIV compared to all other race categories combined (34 versus 7 new infections per 100,000 population). One in every 2,941 Black Virginians were newly infected with HIV, compared to 1 in every 14,286 Virginians of all other race categories combined.

Age at Infection

In 2009, 44% of new infections occurred in 13-29 year olds, 26% occurred among people 30-39 years of age, and 30% in people older than 40 years, with estimated rates of 21, 22, and 8 new infections per 100,000 population, respectively.

Estimated Percentage of New HIV Infections by Age in Virginia, 2009



Sex

The majority of newly infected Virginians were males (73%). In Virginia, men were 3 times more likely to be newly infected with HIV compared to women. The rate of new infections among men was 21 per 100,000 compared to 7 new infections per 100,000 among women.

NATIONAL KEY FINDINGS 2006-2009

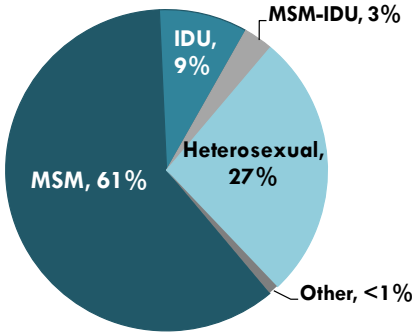
Overall the CDC estimates that the number of new HIV infections was relatively stable from 2006 to 2009 with 48,600 (Confidence Interval [CI]:42,400-54,700) new HIV infections in 2006, 56,000 (CI:49,100-62,900) in 2007, 47,800 (CI:41,800-53,800) in 2008, and 48,100 (CI:42,200-54,000) in 2009.

Transmission Risk

Men Who Have Sex with Men (MSM)

Gay, bisexual and other men who have sex with men remain the population most affected by HIV in the United States. MSM represent approximately 2% of the U.S. population (Purcell, 2010), but accounted for the majority of new HIV infections from 2006-2009. In 2009, MSM represented 61% of new HIV infections, accounting for 86% of new infections among White men, 73% of new infections among Black men, and 81% of new infections among Hispanic men. From 2006 to 2009, new HIV infections were relatively stable among MSM except MSM aged 13 to 29 years. The increase in HIV incidence among young MSM was driven by a 48% increase in HIV infections among young Black MSM during the 4-year period.

Estimated Percentage of New HIV Infections by Transmission Category in the U.S., 2009



Heterosexuals

From 2006 to 2009 there was not a significant change in the number of new HIV infections among heterosexuals ranging from 14,300 in 2006, 15,700 in 2007, 14,500 in 2008, and 12,900 in 2009. In 2009, heterosexuals accounted for 27% of the estimated new infections. More than two-thirds of those infected through heterosexual sex were women (68%). Black women were most heavily affected, comprising 42% of all new infections among heterosexuals.

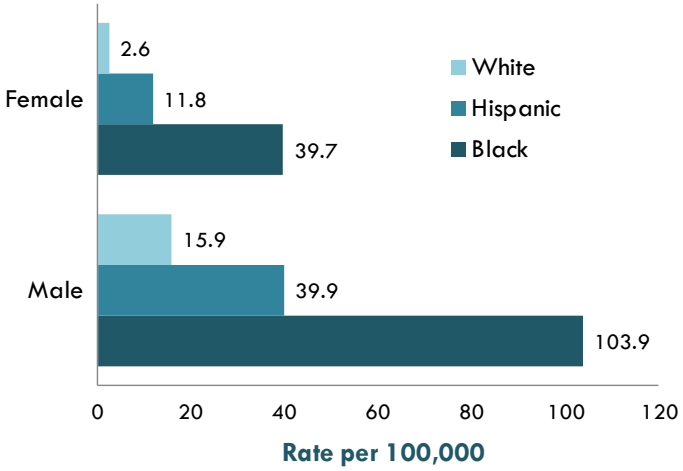
Injection Drug Use

Injection drug users (IDUs) represented 9% (4,500) of the estimated HIV infections in 2009, with Black women and Black men accounting for the greatest number of new infections among IDUs (48%). The number of new HIV infections among IDUs did not significantly change from 2006 to 2009.

Race/Ethnicity

There were no significant changes in the overall HIV incidence from 2006 to 2009 among Blacks, Hispanics, Whites, or other racial/ethnic groups. Blacks continue to bear the greatest burden of HIV. While Blacks represent 14% of the total U.S. population, they accounted for 44% (21,200) of all new HIV infections in 2009. The infection rate among Black men was more than six times that of white men, with the vast majority of infections among MSM.

Estimated Rate of New HIV Infections by Gender and Race/Ethnicity in the U.S., 2009



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